

Remarks/Arguments

Applicants have received and carefully reviewed the Office Action of the Examiner mailed January 10, 2006. Claims 1, 11, 24, 25, and 27 are amended and new claims 44 and 45 have been added. Support for the amendments is found in the specification, claims, and drawings as originally filed. No new matter has been added. Claims 1-45 are pending. Reconsideration and reexamination are respectfully requested.

Allowable Subject Matter

Applicants thank the Examiner for indicating that claims 23, 32, 33, and 37-41 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. New claim 45 corresponds to allowed claim 23, but has been rewritten in independent form.

Rejection under 35 U.S.C. § 103

Claims 1-22, 24-31, 34-36, 42, and 43 are rejected as being unpatentable over Conrad et al. (US 5,465,115) in view of Sengupta et al. (US 6,359,647). The Examiner asserts that Conrad discloses monitoring at least a portion of the border (entrance or exit) of the area of interest for breach by an object, but does not teach monitoring at least a portion of the interior region of the area of interest for the object after the object breaches the border. The Examiner asserts that it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Sengupta et al.'s figure tracking system into the Conrad system in order to provide identification of the figure within the image. Applicants respectfully traverse the rejection.

Independent claim 1, as amended, recites:

1. (Currently Amended) A method for monitoring an area of interest having a border and an interior region, wherein the interior region is at least partially defined by the border region, the method comprising the steps of:

monitoring at least a portion of the border region of the area of interest for breach by an object while not monitoring at least part of the interior region of the area of interest; and

monitoring at least a portion of the interior region of the area of interest for the object after the object breaches the border.

(emphasis added). Conrad et al. appear to teach using a video monitor to detect people traversing a traffic zone. Sengupta et al. appear to teach an automated camera handoff system for tracking a figure in a multiple camera system. Neither Conrad et al. nor Sengupta et al. appear to teach a method in which a border region of an area of interest is monitored while at least part of an interior region of the region of interest is not monitored, as is recited in independent claim 1. Applicants submit that there is no motivation for one of ordinary skill in the art to combine the teachings of Conrad et al. and Sengupta et al. However, even if one were to make such a combination, one would not arrive at the instant invention. Applicants submit that a combination of Conrad et al. and Sengupta et al. would result in a system and method of monitoring traffic outside a store, as taught by Conrad et al., with a separate system for tracking a figure inside the store, as taught by Sengupta et al. Neither reference provides any motivation, suggestion, or guidance for one of ordinary skill in the art to modify the teachings to achieve the method of independent claim 1, or the claims dependent thereon.

Regarding claim 2, the Examiner asserts that Conrad discloses ceasing to monitor the interior region of the area of interest after the object leaves and continuing to monitor at least a portion of the border region. Applicants respectfully disagree. Conrad et al. appears to teach a method involving constant monitoring of the traffic zone. Sengupta et al. also appear to teach constant monitoring of the area of interest. A combination of Conrad et al. and Sengupta et al. would thus also appear to teach constant monitoring of the entire area of interest.

Regarding claim 6, the Examiner points to column 10, lines 41-56 of Diaz for teaching the step of a safety output disabling a piece of equipment in the area of interest. This passage of Diaz, however, describes the control panel having multiple alarm features and door toggle switches to control the four doors of the chambers. Diaz does not appear to teach or suggest a step of having a safety output disable a piece of equipment in the area of interest, as is recited in claim 6.

The Examiner points to column 18, lines 8-20 of Diaz for teaching the safety output sounds an alarm, recited in claim 7. This portion of Diaz, however, teaches that

when a person enters the entrance chamber and sets off the metal detector, the control panel sends a signal to activate the security video recorder for 15 seconds and records the person. Diaz does not appear to teach or suggest a method step of a safety output sounding an alarm, as is recited in claim 7.

Regarding claims 9 and 10, the Examiner points to Conrad et al., Fig. 1, item 8 for teaching the claim elements. Conrad et al. teach "traffic zone 8 is a wide zone of reasonably restricted retail traffic flow, such as the entrance to a department store or shopping mall." See column 4, lines 15-17. Conrad et al. do not appear to teach traffic zone 8 as either an interrupted region or as having an area of interest excluding a defined region from its interior, as is recited in claims 9 and 10, respectively.

The Examiner states that claim 11 is similarly analyzed and rejected the same as claim 1. Independent claim 11, however, recites method steps distinct from those of claim 1. Claim 11, as amended, recites the method steps of:

- capturing a capture image of the area of interest;
- identifying one or more border regions in the captured image that correspond to the border of the area of interest;
- analyzing the one or more border regions of the captured image and determining if an object has entered the one or more border regions of the area of interest; and
- outputting a signal indicating when an object has entered the one or more border regions of the area of interest, wherein at least part of the interior of the area of interest is not monitored until a determination is made that an object has entered the one or more border regions.

Emphasis added. Neither Conrad et al., Sengupta, et al., nor a combination thereof appears to teach or suggest the method steps of claim 11. In particular, as noted above, neither reference appears to teach not monitoring at least part of the interior of the area of interest until a determination is made that an object has entered the one or more border regions. Both Conrad et al. and Sengupta et al. appear to teach constant monitoring of the area of interest.

Regarding claims 12, 13, 15, and 16, the Examiner asserts that Conrad et al. disclose one or more border region including a reference marking, pointing to Fig. 1, item 8 for support. As stated above with reference to claims 9 and 10, Conrad et al. teach item

8 in Fig. 1 as a traffic zone 8 in front of a department store or shopping mall. Conrad et al. do not appear to teach any reference marking in the traffic zone 8.

Regarding claim 17, the Examiner asserts that Conrad et al.'s teaching of counting people when they enter or exit the store reads on the claimed step of a border area includes a reference marking that is a predetermined pattern that determines a minimum size of the objects to be detected. Applicants do not understand the basis for this rejection. Conrad et al. do not appear to teach any reference markings in the traffic zone and additionally do not appear to teach any minimum size of objects to be detected.

Claim 21 recites taking the reference image at a set time interval. The Examiner points to column 4, lines 40-44 of Conrad et al. for such a teaching. This portion of Conrad et al. actually teaches a microprocessor with memory and storing the results on a disc. Conrad et al. does not appear to teach taking a reference image at a set time interval, as is recited in claim 21.

Independent claim 24, as amended, recites:

24. (Currently Amended) A method for monitoring an area of interest having a border and an interior region, the method comprising the steps of:

capturing at least two images of the area of interest using two separate image capturing devices;

identifying one or more border regions in the captured images that correspond to the border of the area of interest;

analyzing the one or more border regions of the captured images but not at least part of the interior region to determine when an object enters the area of interest; and

outputting a signal indicating whether or not an object has entered the area of interest.

Neither Conrad et al., Sengupta et al., nor a combination thereof appears to teach or suggest the method steps of claim 24. Both Conrad et al. and Sengupta et al. appear to teach analyzing the entire captured image for the presence of an individual.

The Examiner states that claims 27, 28, 30, 31, and 36 are similarly analyzed and rejected the same as claims 1-9. Neither Conrad et al., Sengupta et al., nor a combination thereof appears to teach or suggest the method steps of claims 27, 28, 30, 31, and 36.

In particular, independent claim 27, as amended, recites

27. (Currently Amended) A system for monitoring an area of interest having a border and an interior region, comprising:
capturing means for capturing a capture image of the area of interest; and
monitoring means for monitoring at least a portion of the border region of the area of interest for breach by an object, and for monitoring at least a portion of the interior region of the area of interest for the presence of the object after the object breaches the border; wherein the monitoring means does not monitor at least part of the interior region unless an object breaches the border region.

Both Conrad et al. and Sengupta et al. appear to teach constant monitoring of the entire area of interest. Thus, even if one were to combine the teachings of Conrad et al. and Sengupta et al., one would not arrive at the claimed system.

Independent claim 28 and claims 29-30 dependent thereon recite a system having an image capturing means, first and second processing means for processing at least one capture image to determine if an object has entered the area of interest, and output means for outputting a signal indicating that an object has entered the area of interest when both the first processing means and second processing indicate that an object has entered the object of interest. Conrad et al. appears to have one processing means for processing the capture image of the entire area of interest in order to monitor traffic flow in front of the store. Conrad et al. does not appear to teach or suggest using two processing means or outputting a signal indicating the presence of an object when both processing means indicate the presence of an object. Sengupta et al. appear to teach multiple cameras that hand off imaging a person as he or she moves through a space. Sengupta et al. do not appear to teach indicating the presence of a person when two processing means detect the person, thus the combination of Conrad et al. and Sengupta et al. appears to fail to teach the elements of the claims.

Independent claim 31 recites a method in which at least a portion of the border region of the area of interest is monitored for breach by an object having a first minimum size, and at least a portion of the interior region of the area of interest is monitored for an object having a second minimum size after the object breaches the border region of the area of interest. The Examiner did not specifically address claim 31. Applicants submit that neither Conrad et al. nor Sengupta et al. appear to teach or suggest anything with

respect to a minimum size of an object to be detected, as is recited in independent claim 31.

Independent claim 36 recites a method for monitoring an area of interest having two or more regions, in which each region has a border and an interior region. The method involves capturing a capture image of the area of interest, monitoring the border and/or interior region of a first region of the area of interest for breach by an object, and monitoring the border and/or interior region of a second region of the area of interest for breach by an object. The Examiner did not separately address claim 36. Neither Conrad et al. nor Sengupta et al. appear to teach or suggest such method steps.

Conrad et al. do not appear to teach or suggest the elements of the claims. Sengupta et al. do not provide what Conrad et al. lacks, therefore a combination of Conrad et al. and Sengupta et al. also fails to teach or suggest the elements of the claims. Withdrawal of the rejection is respectfully requested.

Reconsideration and reexamination are respectfully requested. It is submitted that, in light of the above remarks, all pending claims are now in condition for allowance. If a telephone interview would be of assistance, please contact the undersigned attorney at 612-359-9348.

Respectfully Submitted,

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